



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of : Confirmation No. 5653
Takehiko KISHIKAWA : Attorney Docket No. 2005_0600A
Serial No.10/532,798 : Group Art Unit 2841
Filed April 25, 2005 : Examiner Tania C. Courson

INCLINATION MEASUREMENT
INSTRUMENT

Mail Stop: Appeals -Patents

APPELLANT'S BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following is Appellant's Brief, submitted in under the provisions of 37 C.F.R. § 41.37. The fee of \$255.00 required by 37 C.F.R. § 41.20 is enclosed.

REAL PARTY IN INTEREST

The real party in interest is Satoru Yoshigou, the assignee of record (Reel/Frame: 017291/0764).

RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

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STATUS OF CLAIMS

Claims 1-10 are rejected. The rejections of claims 1-10 are being appealed. A complete copy of claims 1-10 is provided in the attached Claims Appendix.

STATUS OF AMENDMENTS

There were no amendments to the claims submitted after the final rejection of December 12, 2007.

SUMMARY OF CLAIMED SUBJECT MATTER

A description of the subject matter of the rejected claims is presented below. All references to the specification refer to the substitute specification filed on March 28, 2007.

The subject matter of claim 1 is directed to an inclination measurement instrument for measuring an inclination with respect to a vertical direction. As shown in Figs. 1A-1B, the inclination measurement instrument includes a main body frame (1), a reference arm (2) connected to a first end of the main body frame so as to be perpendicular relative thereto, and a telescoping arm (3) connected to a second end of the main body frame so as to be perpendicular relative thereto (see page 7, lines 15-18). The reference arm and the telescoping arm extend in the same direction from the main body frame and are adapted to contact the face to be measured (see Figs. 6A-6B).

Further, as shown in Fig. 2A, the telescoping arm has a slide scale (3a, 3b) that is movable by telescoping the telescoping arm and a bubble gauge (8) for determining a level of the telescoping arm (see page 7, line 23 to page 8, line 8). As shown in Fig. 2A, the bubble gauge

(8) is mounted at a position corresponding to a reference line (6b) of the graduations of the slide scale. During an inclination measurement, the telescoping arm is adjusted so that the telescoping arm is level as indicated by the bubble gauge (see page 10, line 23 to page 11, line 3).

The present invention, as defined in claim 2, recites that the bubble gauge determines a level of the telescoping arm in a telescoping direction (page 8, lines 14-16).

The present invention, as defined in claim 3, recites that the bubble gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction (page 9, lines 10-21; Figs. 4A-4B).

The present invention, as defined in claim 4, recites that the bubble gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction. The bubble gauge in this arrangement is capable of determining a level in the telescoping direction and in the direction perpendicular to the telescoping direction (page 9, line 22 to page 10, line 5; Fig. 5).

As defined in claim 5, the bubble gauge can be observed from both upper and under sides of the telescoping arm (page 9, lines 6-9).

As defined in claim 6, the inclination measuring instrument further includes a driving mechanism that drives a telescoping operation of the telescoping arm (page 8, lines 9-10).

As defined in claim 7, the driving mechanism is operable to convert rotary movement of a dial (7) into telescoping movement of the telescoping arm (page 8, lines 10-13).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 527,815 issued to Schnell (hereinafter “the Schnell patent”) in view of U.S. Patent No. 2,457,613 issued to Thomas (hereinafter “the Thomas patent”).

ARGUMENT

The Examiner’s detailed rejection is set forth on pages 2-4 of the Office Action mailed on December 12, 2007. In the rejection, the Examiner takes the position that “it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the level instrument of Schnell, so as to include a bubble gauge, as thought by Thomas, so as to provide additional inclination measurement accuracy during measurement of a surface.”

It is submitted that the Examiner has not presented a *prima facie* case of unpatentability because the Examiner has not articulated a sufficient reason why one skilled in the art would have modified the Schnell patent in view of the Thomas patent so as to arrive at the invention claimed in claim 1.

Discussion of the Applied References

Schnell discloses a measuring instrument (spirit level) and attachments for the spirit level that permit it to be used for purpose of laying gas, sewer, and other pipes at desired angles to the horizontal. In particular, page 1, lines 11-19 of the Schnell patent state:

“This invention relates to measuring instruments, and more especially to attachments for spirit levels; and the object of the same is to produce a pair of such attachments whereby an

ordinary spirit level may be used for the purpose of laying gas, sewer, and other pipes at the desired angle to a horizontal, as well as for leveling shafting and other similar uses to which the device may be put."

The structure of the Schnell measuring instrument includes a spirit level (see Fig. 1), a first attachment member (left support member in Fig. 1), and a second attachment member (right support member in Fig. 1). The second attachment member has legs 20 provided with scales or graduation marks 23, and a block 24 slidably inserted in the legs 20 so that the upper end of the block moves adjacent the scale 23 (see page 1, lines 82-101). The degree of inclination, relative to the horizontal, can be indicated by movement of the block 24 within the legs 20 (see page 2, lines 86-97).

In the explanation of the rejection, the Examiner takes the position that Schnell discloses:

"a) a main body frame (Fig. 1) that is to be arranged along a vertical face to be measured (Fig. 1), the main body frame having a first end and a second end (Fig. 1); and . . . for determining a level of the telescoping arm (Fig. 1), . . . the telescoping arm is adjusted so that the telescoping arm is level as indicated by the gauge (Fig. 1);

b) wherein the gauge determines a level of the telescoping arm in a telescoping direction (Fig. 1); . . . i) wherein when the telescoping arm becomes level as indicated by the gauge, the inclination of the face to be measured is indicated by the slide scale (12) on the telescoping arm (Fig. 1)."

The Examiner's statement that Schnell discloses a "main body frame (Fig. 1) that is to be arranged along a vertical face to be measured (Fig. 1)" is completely incorrect. As shown in Fig. 1 of the Schnell patent, the spirit level attachments are arranged along a horizontal face to be

measured. Clearly, Schnell does not provide a gauge for determining a level of the telescoping arm as required in claim 1. Rather, when the main body frame (spirit level) is level, the Schnell gauge indicates the inclination of an object relative to the horizontal.

Further, in the Schnell device, the telescoping arm is arranged perpendicular to the main body frame, which is provided with a spirit level. Therefore, even if the main body frame in Schnell is arranged along a vertical face, it would not be possible to determine the level of the telescoping arm.

Thomas simply discloses bubble gauges (spirit levels 47-51) mounted on a combination bevel, i.e. not an inclination measuring instrument.

Independent Claim 1

Claim 1 is directed to an inclination measurement instrument for measuring an inclination with respect to a vertical direction, and requires, *inter alia*:

a telescoping arm connected to the second end of the main body frame so as to be perpendicular relative to the main body frame,

wherein the telescoping arm has a slide scale that is movable by telescoping the telescoping arm and a bubble gauge for determining a level of the telescoping arm, the bubble gauge being mounted at a position corresponding to a reference line of graduations of the slide scale,

wherein, during an inclination measurement, the telescoping arm is adjusted so that the telescoping arm is level as indicated by the bubble gauge.

I. The Schnell instrument is not capable of measuring an inclination with respect to a vertical direction.

Claim 1 is directed to an inclination measurement instrument for measuring an inclination with respect to a vertical direction.

In contrast, **Schnell** discloses a measuring instrument (spirit level) and attachments for the spirit level that permit it to be used for the purpose of laying gas, sewer, and other pipes at desired angles to the horizontal. Thus, the Schnell instrument is fundamentally different than the instrument claimed in the present invention, and could not be used to measure an inclination with respect to a vertical direction.

Claim 1 also specifies that “the telescoping arm has a slide scale that is movable by telescoping the telescoping arm and a bubble gauge for determining a level of the telescoping arm, the bubble gauge being mounted at a position corresponding to a reference line of graduations of the slide scale.” As discussed above, Schnell does not have any device for measuring the level of the telescoping arm. Accordingly, it follows that the specific position of the bubble gauge, required in claim 1, is clearly not met by the Schnell/Thomas combination.

In the Advisory Action (mailed April 2, 2008), the Examiner states that:

“[T]he applicant’s argument states that the “Schnell instrument is not capable of measuring an inclination with respect to a vertical direction”, lines 18-19 and lines 86-88 of Schnell can be broadly interpreted to allow for capability of measuring inclination with respect to a vertical direction, so as a result the Schnell structure is capable of performing the intended use, then it meets the claim language.”

However, the text referenced in the Schnell patent does not support the Examiner's position, and furthermore the Schnell measuring device is simply not capable of performing the functions recited in claim 1.

II. There is no reason to provide a bubble gauge on the telescoping arm of Schnell.

The present invention, as defined in claim 1, requires a bubble gauge for determining a level of the telescoping arm. Claim 1 specifies that the bubble gauge is mounted at a position that corresponds to a reference line of graduations of the slide scale that is movable by telescoping a telescoping arm.

There is no reason to provide a bubble gauge on the telescoping arm of Schnell. Providing a bubble gauge on the Schnell telescoping arm would not serve any significant purpose in the environment of Schnell, which is an instrument for measuring an inclination with respect to a horizontal direction.

Applicant concedes that a bubble gauge is known *per se*. However, there is no reason to provide the Thomas bubble gauge(s) on the telescoping arm of Schnell. The Examiner's states that providing the Thomas bubble gauge in the environment of Schnell would "provide additional inclination measurement accuracy during measurement of a surface." However, this would not be true in the proposed Schnell/Thomas device.

During the extended prosecution of the present application, the Examiner was requested to explain how a bubble gauge on the telescoping arm of Schnell would improve the accuracy of the inclination measurement.

The only response to this inquiry was in the Advisory Action (mailed April 2, 2008) in which the Examiner states:

“[T]he applicant’s argument also states that the [sic] ‘There is no reason to provide a bubble gauge on the telescoping arm of Schnell’. The Thomas reference teaches horizontal as well as vertical measurement, so including a bubble gauge of Thomas to the gauge of Schnell, which is capable of measuring vertical direction, allows for addition inclination measurement accuracy. So as a result the combination of the Schnell and Thomas structure meets the claim language.”

Initially, as demonstrated above, the Schnell measuring device is not capable of measuring inclination with respect to the vertical direction. The Examiner’s statement that “including a bubble gauge of Thomas to the gauge of Schnell . . . allows for addition inclination measurement” is pure speculation. The Examiner’s conclusion is clearly not based on facts or sound scientific reasoning. Clearly, the proposed modification would not improve the accuracy of measurements by the Schnell device, nor would it provide any additional function. There must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Ex parte Wada and Murphy*, at 7, BPAI Appeal No. 2007-3733 (January 14, 2008) citing *KSR int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007).

Furthermore, the Thomas reference clearly does not teach providing a bubble gauge in the specific position required in claim 1 (“the bubble gauge being mounted at a position corresponding to a reference line of graduations of the slide scale”).

Clearly, in view of the fact that providing a bubble gauge on the telescoping arm of Schnell would provide no significant function, it is submitted that the proposed combination is the result of impermissible hindsight. See *W.L. Gore and Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220

USPQ 303, 312-313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). There is nothing in the present record, absent Appellant's disclosure, that would suggest providing a bubble gauge on the telescoping arm (20, 30) of the Schnell measuring instrument.

Dependent Claim 2

Claim 2 requires that "the bubble gauge determines a level of the telescoping arm in a telescoping direction." In the final rejection, the Examiner takes the position that "Schnell discloses a level instrument including of [sic] the following: . . . b) wherein the gauge determines a level of the telescoping arm in a telescoping direction (Fig. 1)". However, the telescoping attachment (see Figs. 2 and 4) of the Schnell patent does not include a gauge thereon. Thus, there is no structure disclosed in the Schnell patent that could meet the limitation of claim 2.

Dependent Claims 3-4

Claim 3 requires that "the bubble gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction." In the final rejection, the Examiner takes the position that "Schnell discloses a level instrument including of [sic] the following: . . . c) wherein the gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction (Fig. 1)". However, the telescoping attachment (see Figs. 2 and 4) of the Schnell patent does not include a gauge thereon. Thus, there is no structure in the Schnell patent that could meet the limitation of claim 3.

Claim 4 depends on claim 2, and therefore the recited gauge must function to determine a

level of the telescoping arm in both a telescoping direction and a direction perpendicular to the telescoping direction. Clearly, the Schnell patent does not include a gauge that performs either of the recited functions.

Dependent Claim 5

Claim 5 requires that the bubble gauge can be observed from both upper and under sides of the telescoping arm. In the final rejection, the Examiner takes the position that “Schnell discloses a level instrument including of [sic] the following: . . . d) wherein the gauge can be observed from both upper and under sides of the telescoping arm (Fig. 1)”. However, the telescoping attachment of the Schnell patent does not include a gauge, and thus, the Schnell patent simply cannot meet the language of claim 5.

Dependent Claim 6

Claim 6 requires a driving mechanism that drives a telescoping operation of the telescoping arm. In the final rejection, the Examiner takes the position that “Schnell discloses a level instrument including of [sic] the following: . . . e) further comprising a driving mechanism (26) that drives a telescoping operation of the telescoping arm (Fig. 1)”. However, element 26 of the Schnell patent is a set screw (see page 1, lines 86-90) for holding the block 24 in a desired position (see page 2, lines 60-63). Clearly, the set screw 26 of the Schnell patent cannot reasonably be construed to correspond to the driving mechanism recited in claim 6.

Dependent Claim 7

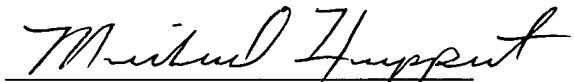
Claim 7 depends on claim 6 and further requires that “the driving mechanism converts a rotary movement of a rotating member into a telescoping movement of the telescoping arm.” In the final rejection, the Examiner takes the position that “Schnell discloses a level instrument including of [sic] the following: . . . f) wherein the said driving mechanism converts a rotary movement of a rotating member into a telescoping movement of the telescoping arm (Fig. 1)”. However, as discussed above with respect to claim 6, the Schnell patent does not disclose a driving mechanism of any kind, and therefore, the Schnell patent cannot meet the language of claim 7.

CONCLUSION

For the reasons set forth above, it is submitted that the collective teachings of the Schnell and Thomas patents do not meet each and every limitation of at least independent claim 1. Also, it is submitted that there is no legitimate reason to combine the references as proposed by the Examiner. Therefore, the Examiner's decision to finally reject claims 1-10 should be reversed.

Respectfully submitted,

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APPENDIX - Claims on Appeal.

1. An inclination measurement instrument for measuring an inclination with respect to a vertical direction, the inclination measurement instrument comprising:
 - a main body frame that is to be arranged along a vertical face to be measured, the main body frame having a first end and a second end; and
 - a reference arm connected to the first end of the main body frame so as to be perpendicular relative to the main body frame; and
 - a telescoping arm connected to the second end of the main body frame so as to be perpendicular relative to the main body frame,

wherein the reference arm and the telescoping arm extend in the same direction from the main body frame and are adapted to contact the face to be measured, and

wherein the telescoping arm has a slide scale that is movable by telescoping the telescoping arm and a bubble gauge for determining a level of the telescoping arm, the bubble gauge being mounted at a position corresponding to a reference line of graduations of the slide scale,

wherein, during an inclination measurement, the telescoping arm is adjusted so that the telescoping arm is level as indicated by the bubble gauge.
2. The inclination measurement instrument according to claim 1, wherein the bubble gauge determines a level of the telescoping arm in a telescoping direction.
3. The inclination measurement instrument according to claim 1, wherein

the bubble gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction.

4. The inclination measurement instrument according to claim 2, wherein the bubble gauge determines a level of the telescoping arm in a direction perpendicular to a telescoping direction.
5. The inclination measurement instrument according to claim 1, wherein the bubble gauge can be observed from both upper and under sides of the telescoping arm.
6. The inclination measurement instrument according to claim 1, further comprising a driving mechanism that drives a telescoping operation of the telescoping arm.
7. The inclination measurement instrument according to claim 6, wherein the driving mechanism converts a rotary movement of a rotating member into a telescoping movement of the telescoping arm.
8. The inclination measurement instrument according to claim 1, wherein the reference arm is provided with a protrusion on a portion to be in contact with the face to be measured on an outer side of the main body frame.

9. The inclination measurement instrument according to claim 1, wherein the main body frame is provided with a bubble gauge for determining a level of the main body frame.
10. The inclination measurement instrument according to claim 1, wherein, when the telescoping arm becomes level as indicated by the bubble gauge, the inclination of the face to be measured is indicated by the slide scale on the telescoping arm.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None